

The Covered Electronic Waste (CEW) Recycling Program and the CRT Glass Challenge

Jeff Hunts, Manager
Electronic Waste Recycling Program
Department of Resources Recycling &
Recovery (CalRecycle)

Electronic Waste Recycling Act

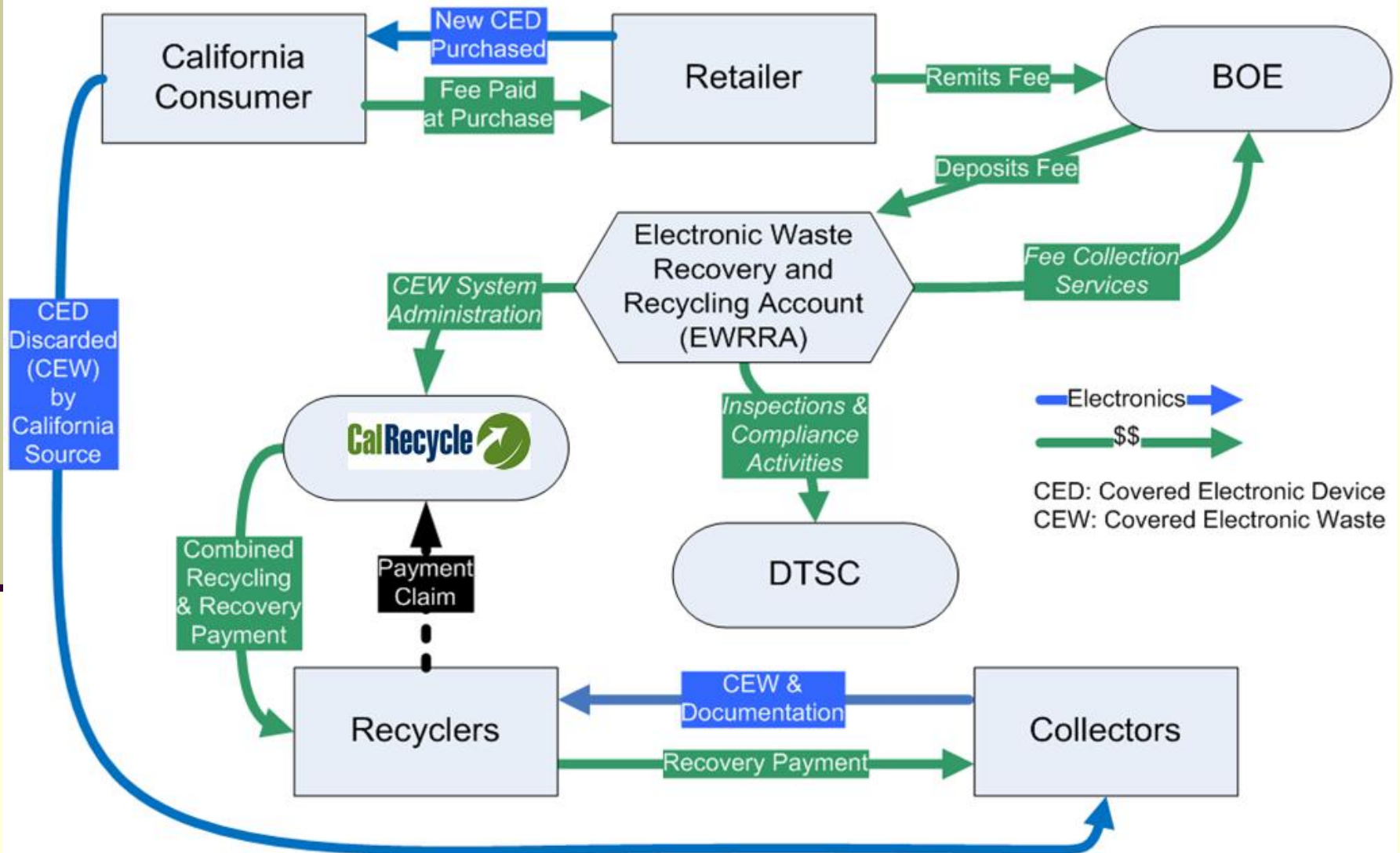
- *PRC 42461. The Legislature finds and declares all of the following:*

- *(a) The purpose of this chapter is to enact a comprehensive and innovative system for the reuse, recycling, and proper and legal disposal of covered electronic devices...*

...

- *(h)...provide sufficient funding for the safe, cost-free, and convenient collection and recycling of 100 percent of the covered electronic waste initially discarded in the state, to eliminate electronic waste stockpiles and legacy devices by December 31, 2007...*

CEW Recovery and Recycling System



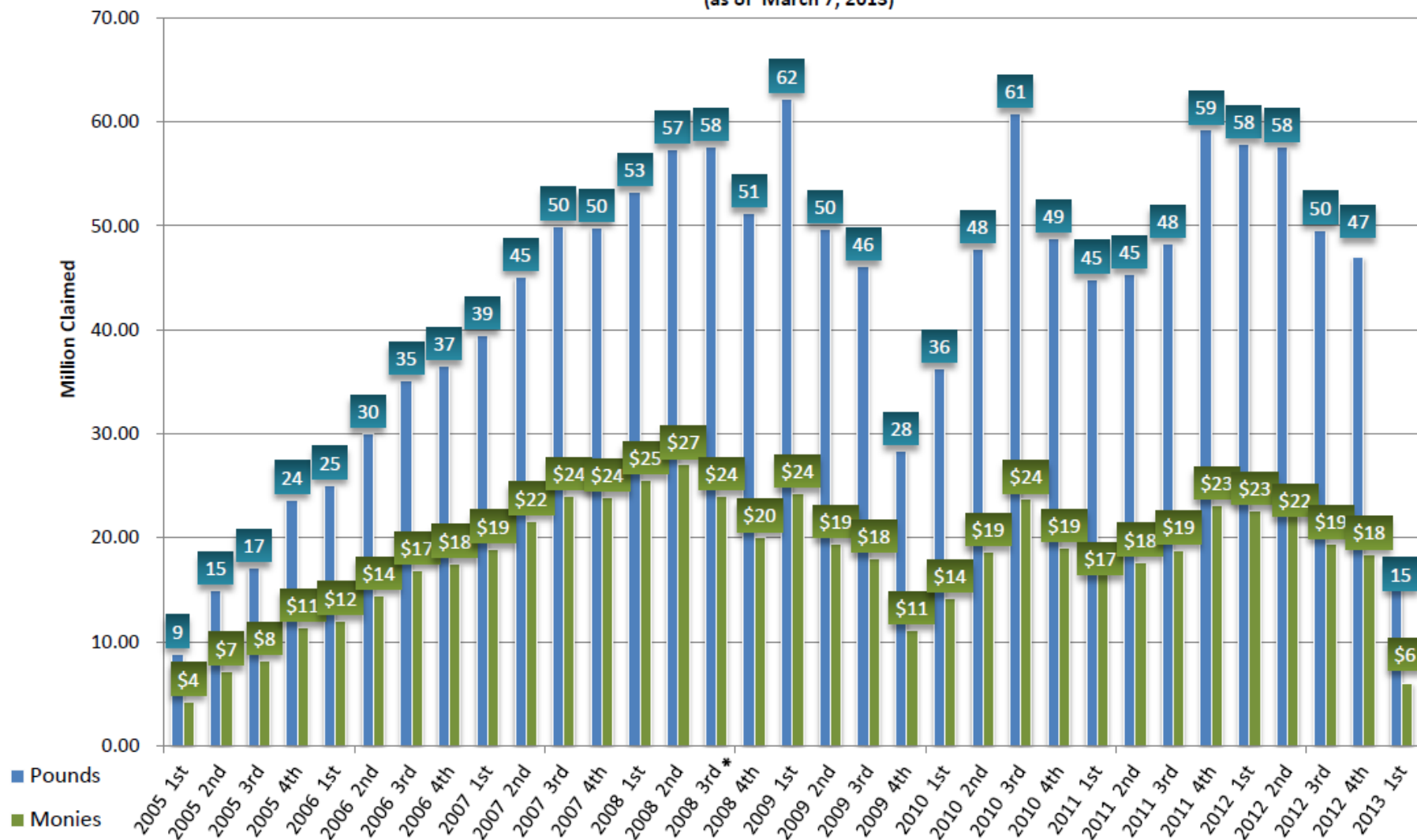
CEW Recycling Program Stats

- **Nearly 1.4 Billion Pounds of CEW Recycled**
 - Associated infrastructure has recovered similar amounts of miscellaneous discarded electronic devices.
- **99% (by weight) has been CRT Devices**
 - Volume of CRT recovered is slowing.
 - Still an unknown amount of CRT yet to be discarded and managed.
 - Flat panel technology increasing.

Covered Electronic Waste Recycling Payment System

Quarterly Monies and Pounds Claimed

(as of March 7, 2013)



* Change in the standard payment rate effective 3rd quarter 2008.

Current CEW Recycling Program Rules

- **Before filing a payment claim:**

- Recycler must ship CRT glass to a destination authorized to receive and further treat that material

- **As part of claim:**

- Recycler must provide "...a discussion of the ultimate disposition of the (CRT glass) shipped demonstrating that the disposition is not disposal to land, water or air..."

Where Has the Glass Gone?

- In mid-2009, nearly 75% of CA CRT glass was directly shipped to processors in Mexico.
- Since January 2010, as much as 80% of CA CRT glass was initially shipped to an domestic (U.S.) destination.
- At least five CA recyclers have authorization to “treat” glass; can serve as a destination.

Initial CRT Destinations (in millions of pounds)

Initial Destination	Since January 2010	Since January 2012
<u>In-State</u>		
ECS Refining / Regenesys Glass (Stockton)	22	17
Electronic Recyclers International (Fresno)	41	8.5
e-Recycling of California (Irvine)	51	13
E-World Recyclers (Vista)	1	< .5
PC Recycle (Newbury Park)	< 4	1.5
<u>Out-of-State</u>		
Closed Loop Refining and Recovery (Arizona)	74	26
Com2 Computer & Technology (Illinois)	< 1	
Dlubak Glass (Arizona, Ohio)	34	
Doe Run (Missouri)	< 1	
Dow Management (Arizona)	6	6
Universal Recycling Technologies (Oregon)	4	
<u>Foreign</u>		
Hankuk Electric Glass (Korea)	< 2	
Samsung Corning (Malaysia)	< 2	
Samtel Glass / Videocon Industries (India)	7.5	5
Technologies Displays Mexicana (Mexico)	58	26

DTSC Changes CRT Rules

- DTSC recognized changing market conditions and loopholes in regulation.
- Participated in several CalRecycle workshops to outline possible changes.
- Enacted emergency rules Oct 15, 2012.
- Rules establish pathways to alternative management; strengthened oversight.

Time to Reconsider Options?

- Recovery and recycling of resources should be fostered and maximized, if possible.
- Not all CRT glass is the same; this presents both opportunities and limitations.
- Do viable (environmentally sound / economically feasible) recycling markets exist? Today? Tomorrow?

Time to Reconsider Options?

- Realistic and reliable downstream(s) for CRT glass is imperative.
- Stockpiling -- in-state or in other states -- in hopes of eventual solution appears untenable.
- Can or should regulated disposal of residual CRT glass be accommodated in the CEW system?

Today's Discussion

- CalRecycle is committed to working together with stakeholders to find workable CRT glass management options.
- DTSC's rules **necessarily** come first.
- CalRecycle can pursue emergency regulation changes in CEW system to allow legal and well documented glass management practices.

Today's Discussion

- Panel of expert interests representing recyclers, down-stream options, and advocates.
- Self-introduction and optional limited opening remarks to establish connection to subject.
- Moderated discussion among panelists; Q & A exchanges with other workshop attendees.

Today's Discussion

- CRT Markets

- Where are they, for how long, what's coming?

- Industry Economics

- Cost drivers and material value?

- Program Administration

- What does a revised CEW program look like?